IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jerry L. Holden
Serial No.:	10/584,033
Filed:	05/01/2007
Group Art Unit:	3725
Examiner:	Yusuf, Mohammad I.
Conformation No.:	6905
Title:	INDENTED TUBE FOR A HEAT EXCHANGER

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant now submits its brief in this appeal. A Notice of Appeal was filed on October 8, 2010. The Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds in the amount of $540.00, as well as for any additional fees or credit the account for any overpayment.

Real Party in Interest

Cooper Standard Automotive, Inc. is the Assignee of this application. The Assignment was recorded at Reel 018288, Frame 0499, on September 22, 2006.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of the Claims

Claims 1-2, 5-9, 11-13 and 20-21 are pending and are appealed. Claims 3-4, 10 and 14-19 are cancelled. The pending claims are presented in the Appendix.

Status of Amendments

There are no unentered amendments.

Summary of Claimed Subject Matter

Claims 1, 20 and 21 are the independent claims on appeal. These claims are reproduced below, including references to the specification and drawings which show that the claims read on an example embodiment from the specification. Claim 11 is also included as this claim is argued independently below.

1. A method of forming a tube 12 (p. 3, l. 27 – p. 4, l. 5; Figs. 2-3) comprising the steps of:
positioning the tube 12 in a first position (p. 3, ll. 29–30; Figs. 2-3);
forming an indentation 30 on the tube 12 with a mold 22 (p. 3, ll. 30–31; Figs. 2-3);
moving the tube 12 to a second position relative to the mold 22 (p. 3, ll. 31–32; Figs. 2-3); and
releasing the mold 22 from the tube 12, wherein the step of moving occurs after the step of releasing (p. 3, l. 31; Figs. 2-3).

11. The method as recited in claim 1 wherein the mold 22 includes a roller that engages the tube 12, and the step of moving the tube 12 forms a groove 34 on the tube 12 as the roller engages the tube (p. 4, ll. 8-11; Figs. 2-3, 7-10).

20. A method of forming a tube 12 (p. 3, l. 27 – p. 4, l. 24; Figs. 2-3, 5), comprising the steps of:
positioning the tube 12 in a mold 22 at a first position (p. 3, ll. 29–30; Figs. 2-3);
crimping the tube 12 with the mold 22 to form an indentation 30 in the tube 12 (p. 3, ll. 30–31; Figs. 2-3);
releasing the mold 22 from the tube 12 (p. 3, l. 31; Figs. 2-3);
axially translating the tube 12 to a second position relative to the mold 22 subsequent to releasing the mold 22 from the tube 12 (p. 3, l. 31 – p.4, l. 24; Figs. 2-3, 5); and
crimping the tube 12 with the mold 22 to form an additional indentation

30 in the tube 12 (p. 3, ll. 32 – p.4, l. 5; Figs. 2-3).

21. A method of forming a tube 12 (p. 3, l. 27 – p. 4, l. 11; Figs. 2-4), comprising the steps of:

positioning the tube 12 in a mold 22 at a first position (p. 3, ll. 29–30; Figs. 2-3);

crimping the tube 12 with the mold 22 to form an indentation 30 in the tube 12 (p. 3, ll. 30–31; Figs. 2-3);

releasing the mold 22 from the tube 12 (p. 3, l. 31; Figs. 2-3);

axially and rotatably translating the tube 12 from the first position to a second position relative to the mold 22, wherein the tube 12 is rotated between 5 and 10 degrees (p. 3, l. 31 – p. 4, l. 11; Figs. 2-4); and

crimping the tube 12 with the mold 22 to form an additional indentation 30 in the tube 12 subsequent to axially and rotatably translating the tube 12 (p. 4, ll. 6-11; Fig. 4).

Grounds of Rejection to be Reviewed on Appeal

A. Is claim 11 properly rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention?

B. Are claims 1-2, 6-8, 10 and 20 properly rejected under 35 U.S.C. §102(b) as being anticipated by *Valleins* (U.S. Patent No. 3,494,170)?

C. Is claim 11 properly rejected under 35 U.S.C. §103(a) as being obvious over *Valleins* in view of *Zifferer* (U.S. Patent Application No. 2002/0121361)?

D. Is claim 21 properly rejected under 35 U.S.C. §103(a) as being obvious over *Valleins* in view of *Steingroever* (U.S. Patent No. 5,964,127)?

ARGUMENT

A. The rejection of claim 11 under 35 U.S.C. §112, second paragraph, should be withdrawn.

Claim 11 is rejected as being indefinite under 35 U.S.C. §112, second paragraph. Appellant respectfully submits that the Examiner's indefiniteness rejection is improper. Claim 11 expands on the "moving" step recited in independent claim 1. For example, claim 11 further defines the "moving" step to include forming grooves on the tube. A method claim is not indefinite simply because it includes some structural limitations. *See Microprocessor Enhancement Corp. v. Texas*

Instruments, Inc., 520 F.3d 1367 (Fed. Cir. 2008). Indeed, the Examiner has not pointed any authority in the MPEP or elsewhere that states that a method claim that includes some structure is indefinite. Accordingly, claim 11 is not indefinite.

B. The rejection of claims 1-2, 6-8, 10 and 20 under 35 U.S.C. §102(b) should be withdrawn.

Claims 1-2, 6-8, 10 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by *Valleins*. Independent 1 claims that the tube is moved relative to the mold subsequent to releasing the mold from the tube, while independent claim 20 similarly requires that the tube is axially translated relative to the mold subsequent to releasing the mold from the tube. These claimed features are not taught by *Valleins*.

In contrast, *Valleins* teaches a swaging operation that utilizes a mandrel 3 and press members 2. Column 2, lines 48-72. The press members 2 (i.e., the mold) are never moved relative to the tube 1. Rather, the press members 2 are stationary and the mandrel 3 is the only moveable part of *Valleins*. See Figures 3-4. Moving the wedge shaped member 9 of the mandrel 3 between a retracted and inserted position is not the same as releasing a mold from the tube as claimed by the Appellant. *Valleins* does not disclose the step of "releasing the mold from the tube" and the claims are not anticipated.

In the Advisory Action, the Examiner attempts to rebut Appellants arguments by arguing that the tube of *Valleins* has to be moved relative to the mandrel before it undergoes a fresh swaging operation. However, this misses the point. As stated above, *Valleins* does not release a mold from the tube prior to moving the tube. Again, this is because the alleged mold is stationary relative to the tube. For these reasons, claims 1-2, 6-8, 10 and 20 are not anticipated.

C. The rejection of claim 11 under 35 U.S.C. §103 should be withdrawn.

Claim 11 is rejected as being obvious over *Valleins* in view of *Zifferer*. The Examiner acknowledges that *Valleins* fails to disclose a plurality of rollers. However, in view of *Zifferer*, the Examiner contends it would have been obvious to modify *Valleins* to include a plurality of rollers instead of dies because they are functionally equivalent. Appellant respectfully disagrees with this rejection.

First, as detailed above, *Valleins* fails to teach each feature of claim 1. Therefore, the claims are not obvious.

In addition, the rejection of claim 11 requires modifying *Valleins* in a manner that both removes an intended feature and changes the principle of operation of such reference. Neither result is legally permissible under MPEP 2143.01(V) and (VI). Therefore, there is no *prima facie* case of obviousness.

First, *Valleins* describes the desire to form flutings that extend inwardly into the tube with a swaging operation. See column 1, lines 50-55. The inward projection of the flutings is desired in order to provide a tube that is devoid of raised portions, thus enabling flat surfaces to be joined together. See *Id.* Modifying *Valleins* to include rollers instead of dies would destroy the main goal of *Valleins* to provide tubes devoid of raised portions. For example, rollers would form raised portions on the tube of *Valleins* similar to those raised portions depicted in Figure 10 of Appellant's disclosure. Also, the raised portions could interfere with the ability to join flat surfaces together. The proposed modification is improper for at least these reasons, and the rejection to claim 11 must be withdrawn.

Moreover, the proposed modification would improperly change the principal of operation of *Valleins*. *Valleins* is concerned with forming square or rectangular cross-sectioned tubes that facilitate the assembly of tubular frameworks in a swaging operation. Column 1, lines 30-35. It is

unclear how rollers could be adapted for use in combination with the disclosed mandrel of *Valleins* to perform the swaging operations. In addition, it is not clear how the rollers could be adapted for use in the swaging operation and still render the desired square or rectangular tubes. For all of these reasons, the suggested modification to *Valleins* is improper and claim 11 is not obvious.

D. The rejection of claim 21 under 35 U.S.C. §103(a) must be withdrawn.

Claim 21 is rejected under 35 U.S.C. §103(a) as being obvious over *Valleins* in view of *Steingroever*. The Examiner acknowledges that *Valleins* does not disclose rotating the tube in addition to axially translating the tube. However, in view of *Steingroever*, the Examiner contends it would have been obvious to one of ordinary skill in the art at the time the invention was made to both rotate and translate the tube of *Valleins* to provide structural integrity to the metal frame of *Valleins* by having ribs or flutings radially around the metal tube to provide improved ability to withstand transverse compression from any circumferential force. Appellant respectfully disagrees.

First, as detailed above, *Valleins* fails to teach the claimed step of "releasing the mold from the tube." Therefore, the claims are not obvious.

In addition, there is no *prima facie* case of obviousness. The rejection of claim 21 requires modifying *Valleins* in a manner that would both remove an intended feature and change the principle of operation of such reference. Neither result is legally permissible under MPEP 2143.01(V) and (VI).

First, *Valleins* discloses that flat fluted shaped faces are particularly appropriate for withstanding transverse compression forces and are desired. See column 1, lines 45-55. Modifying the *Valleins* swaging operation to include a rotating movement of the tube would alter the desired shape of the flutings and destroy the main goal of *Valleins* to provide flutings that withstand transverse compression forces. Contrary to the Examiner's assertions, the proposed modification

would actually reduce the structural integrity of the *Valleins* metal frame, which requires a square or rectangular cross-section.

Moreover, the proposed modification would change the principle of operation of *Valleins*, which is impermissible under MPEP 2143.01(VI). In order to provide rotation of the square or rectangular cross-sectioned tubes in *Valleins*, the entire configuration of the mandrel 3 and press member 2 of *Valleins* would need redesigned. Indeed, the Examiner does not identify how the mandrel 3 and press members 2 could be designed to provide rotation of square or rectangular shaped tubes during the swaging operation.

Rotating the tubes of *Valleins* would also result in the formation of flutings on the corners of the square and/or rectangular cross-sectioned tubes. Therefore, the tubes would no longer have substantially flat surfaces that enable adjacent tubes to be joined together as desired by *Valleins*. See column 1, lines 50-55. For each of these reasons, claim 21 is not obvious.

Moreover, in the Advisory Action, the Examiner argues that both *Valleins* and *Steingroever* disclose forming tubular bodies for heat exchangers, and therefore one having ordinary skill in the art would be motivated to provide *Valleins* with tubes having ribs/flutings that are radially and axially spaced for use in a heat exchanger. However, *Valleins* does not disclose forming tubular bodies for a heat exchanger. The *Valleins* tubes are metal tubes of square or rectangular cross-sections and are used to facilitate the assembly of tubular frameworks. There is no support within *Valleins* that these tubes are used in a heat exchanger. Accordingly, it is doubtful that a person of ordinary skill in the art would even look to the teachings of *Steingroever* to modify *Valleins*.

Finally, even if one were to accept the Examiner's arguments, the combination of *Valleins* and *Steingroever* fails to teach each feature of Appellant's claim 21. Claim 21 requires that the tube is rotated between 5 and 10 degrees. Although *Steingroever* describes rotating the hollow

body 2, there is no support for rotating the tube between 5 and 10 degrees relative to the mold. For all of these reasons, claim 21 is not obvious.

CONCLUSION

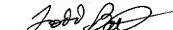
Based on the foregoing, Appellant submits that all claims are in condition for allowance. The Examiner's rejections must be withdrawn.

Respectfully submitted,

CARLSON, GASKEY & OLDS, P.C.

11-22-10

Date



Todd W. Barrett, Reg. No. 58,138
400 W. Maple, Suite 350
Birmingham, MI 48009
(248) 988-8360

CLAIMS APPENDIX

1. A method of forming a tube comprising the steps of:
positioning the tube in a first position;
forming an indentation on the tube with a mold;
moving the tube to a second position relative to the mold; and
releasing the mold from the tube, wherein the step of moving occurs after the step of releasing.

2. The method as recited in claim 1 further including the step of repeating the step of forming an indentation.

5. The method as recited in claim 1 wherein the step of moving includes rotating the tube relative to the mold and translating the tube relative to the mold.

6. The method as recited in claim 5 wherein the step of moving occurs after the step of releasing.

7. The method as recited in claim 1 wherein the step of moving includes translating the tube relative to the mold.

8. The method as recited in claim 7 wherein the step of moving occurs after the step of releasing.

9. The method as recited in claim 5 further including the step of repeating the step of forming an indentation, wherein the step of rotating includes rotating the tube relative to the mold between approximately 5 to 10° between each of the step of repeating.

11. The method as recited in claim 1 wherein the mold includes a roller that engages the tube, and the step of moving the tube forms a groove on the tube as the roller engages the tube.

12. The method as recited in claim 11 wherein the step of moving includes rotating and translating the tube relative to the mold.

13. The method as recited in claim 11 wherein the step of moving includes translating the tube relative to the mold.

20. A method of forming a tube, comprising the steps of:

positioning the tube in a mold at a first position;

crimping the tube with the mold to form an indentation in the tube;

releasing the mold from the tube;

axially translating the tube to a second position relative to the mold subsequent to releasing the mold from the tube; and

crimping the tube with the mold to form an additional indentation in the tube.

21. A method of forming a tube, comprising the steps of:

positioning the tube in a mold at a first position;

crimping the tube with the mold to form an indentation in the tube;

releasing the mold from the tube;

axially and rotatably translating the tube from the first position to a second position relative to the mold, wherein the tube is rotated between 5 and 10 degrees; and

crimping the tube with the mold to form an additional indentation in the tube subsequent to axially and rotatably translating the tube.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.